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DEPARTMENT OF TRANSPORTATION STATE OF HAWAII

ELDERLY PEDESTRIANS LITERATURE REVIEW

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Department of Transportation
Hawaii Highway Safety Social Marketing Program
Sub-Section: Elderly Pedestrians

Summary of Existing Information

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I. PLANNING OVERVIEW

Objective

The objective of this phase of the project is to identify what types of research & social marketing programs have been done in Hawaii, the US and the world that will provide additional insight into programs/actions that will encourage the elderly to practice safe pedestrian behaviors.

Target Groups

- Elderly Pedestrians Ages 65 and Above
  Statistics show that this demographic accounts for the highest percentage of pedestrian fatalities in Hawaii.

We will also consider whether the research should focus on the additional groups below:

- Pedestrians Ages 55 to 64
  Within the next decade, the size of the elderly population will increase with the wave of aging baby boomers.

- All Drivers
  Drivers hold a great amount of responsibility for pedestrian safety.

Next Steps

Areas that require additional examination of the target groups through the telephone survey and focus groups are as follows:

- Reasons that encourage walking rather than driving
- Time of the day they walk most often
- Street crossing behavior
- Reasons for crossing the street outside of crosswalks
- Perceived risks when crossing properly versus improperly
- Perceived risks of being cited when pedestrian laws are broken
- Areas in which pedestrians are most at risk
- Driver attitudes toward elderly pedestrians
- Driver behavior in relation to pedestrian laws

II. INTRODUCTION

An average of 28 pedestrians die each year in Hawaii after being hit by a motor vehicle. For each of these deaths, about 20 more are injured after being struck by a vehicle, which equates to approximately 560 pedestrian injuries within the state each year. According to 2002 statistics, Hawaii ranks fourth in the nation in pedestrian deaths per capita, an increase from the fifth rank during the year prior. For every 100,000 people in Hawaii, an average of 2.5 lose their life as a pedestrian.

Elderly pedestrians, 65 years and over, constituted the highest number of pedestrian fatalities when compared to all other age groups in Hawaii. Although they represent 11 percent of the state's population, over half of the pedestrian fatalities involved the elderly during 2002. More specifically, of the 33 pedestrian deaths last year, 5 were between the ages of 65 –74 and 13 were over the age of 75.

The concern of pedestrian safety needs to be directed toward the senior citizens because this segment tends to walk more frequently for reasons that include: abundant free time, health initiatives, and not being able to or choosing not to drive. Their walking activities put them at risk due to such factors as limited visual distance, reduced ability to see at night, deteriorated hearing, delayed reaction time, and slower walking speeds.

According to the Fatality Analysis Reporting System (FARS), half of all pedestrian fatalities in Hawaii occurred on neighborhood streets during 2002. With most of the elderly population concentrated in metropolitan Honolulu, the combination of high traffic areas and wide roadways create a high-risk area for the pedestrians. The neighborhood boards on Oahu with the highest total number of elderly pedestrian injuries were Kalihi-Palama, Downtown, Ala Moana, McCully/Moiliili, and Waikiki. During hours of low visibility and minimal sunlight, 6 am – 9 am and 6 pm – 9 pm, the cool weather invites the elderly to take walks around their neighborhoods. These are the timeframes in which the majority of fatalities and injuries have occurred among the elderly pedestrians.

Many of the reviewed reports place the blame on engineering efforts that increase traffic flow while neglecting pedestrian safety concerns. Other reports point out the lack of funding directed to safe walking environments. Yet, the majority, 36 percent, of pedestrian fatalities in Hawaii were caused by improper crossing of roadways and intersections. Despite efforts directed toward crosswalk improvements, many pedestrians are disregarding the safety zones provided for crossing the street.

Additional research in Hawaii will need to be conducted to understand the behaviors and attitudes of elderly pedestrians. The concern of pedestrians' neglect for safety needs to be addressed in order to develop a social marketing campaign that will influence them to use crosswalks and abide by laws. In addition, elderly pedestrians and motorists will be educated on becoming alert toward each other in an effort to reduce the number of fatalities in Hawaii.

III. RESEARCH ON ELDERLY PEDESTRIANS

Numerous pedestrian safety studies and reports focus on engineering and funding as the source of causing the rise in injuries and fatalities. These two areas will be acknowledged, but the focus of the literature review will be on understanding elderly pedestrians and their behavior.

Key issues to be addressed when researching elderly pedestrians:

(1) Injury Severity
(2) Physical Ability
(3) Behavior
(4) Causes of Crashes
(5) Crash Locations

Pedestrian Injuries – Key Facts

- Younger pedestrians are generally more able to resist serious injury and death, while elderly pedestrians are much more susceptible to more serious consequences as crash victims. Pedestrians age 65 and older are more than 5 times as likely to die in crashes than pedestrians age 14 or less, and the likelihood of death increases steadily for ages in between.
- The frailty of older pedestrians reduces their ability to withstand collision impacts and recover from an injury.

Physical Ability – Key Facts

- As a result of muscular and skeletal weakening, the elderly lose agility and endurance, which decreases their ability to react quickly when they need to get out of the way from approaching traffic.
- Arthritis sufferers experience severe pains and restrictions in their ranges of motion. This may impair head and body movement to look around, and it also results in difficulties walking.
- Changes in perceptual, cognitive, and motor abilities occur as a person ages, which effects an elderly person's judgment and performance when faced in a crossing situation. This requires a pedestrian to have good motor skills to cross quickly. In addition, visual abilities and estimations of speeds for oncoming vehicles are decreased at dusk and dark hours.
- Older pedestrians have difficulty in integrating the distance and velocity information of oncoming traffic when pressured to think quickly (Oxley 2000).
- Similarly, Oxley (2000) discovered that the slowest elderly pedestrians have difficultly in selecting safe gaps to cross the street, which puts them at risk.
- The majority of older pedestrians in Sheppard and Pattinson's (1988) study complained about difficulties crossing when traffic was dense and moving

quickly, focusing their eyes in traffic, and understanding road complexities such as joins and traffic light patterns.
- Difficulty in negotiation of a situation at an intersection occurs despite the availability of traffic signals for the elderly pedestrians (Retting et al 1996).

Senior Behavior – Key Facts

- Older pedestrians tend to use public transportation more frequently and need to walk substantial distances in order to get to a bus stop.
- Seniors walk slower and stop more often to rest, so they spend more time walking the same distance as a young person.
- Drivers felt that the elderly rely on cars stopping for them, often cross dangerously, are a traffic hazard, and should do more to avoid holding up traffic (Job et al 1994).
- There are numerous studies that demonstrate that elderly pedestrians are more cautious and rule-observing than younger pedestrians (Harrell 1990; Safety for Seniors Working Group 1989; Arnold, Bennett, & Hartley, 1990).
- On the other hand, studies have found that older pedestrians over represent unsafe crossing behavior by crossing the first half of the street and not considering the outcome of the second half of the road (Carthy et al. 1995).

Causes of Crashes – Key Facts

- A study found that drivers rarely checked for pedestrians, proceeded through intersections without slowing, appeared to over-estimate a pedestrian's ability to react in traffic situations, and only reduced speeds when around a large group of pedestrians (Thompson, Fraser, and Howarth 1985).
- Stutts, Hunter, and Pein (1996) found that 55 percent of crashes in the six US states that were studied were driver-related. These include:
    - Hit and run (16%)
    - Failed to yield to pedestrian (15%)
    - Exceeded speed limit or safe speed (6%)
    - Improper backing (6%)
    - Safe movement violation (5%)
    - Inattention or distraction (4%)
    - Reckless driving (3%)
    - Alcohol impairment (3%)

Crash Location – Key Facts

- Older pedestrian crashes tend to occur close to home, near shopping centers, or recreational venues (Oxley 2001).
- Oxley (2001) also identified a range of crash patterns involving elderly:
    - Daylight hours
    - Urban Areas

- Intersections without traffic signals
- Linked to reduced agility – inability to get out of the way of a moving car
- Complex road environments such as undivided roads, at a busy section of roadway, and where vehicles reverse

Minimal research has been conducted specifically on elderly pedestrians, but the studies reviewed above illustrate behavior and physical ability that puts the demographic at high risk. Seniors tend to spend a lot of time walking, which means they are confronted with traffic-related decisions quite often. Physical impairments also add to the degree of risk that the elderly take when crossing the street. Consideration of the frailty of elderly pedestrians is also important when reviewing crash statistics. Their likelihood of dying in a pedestrian accident is increased compared to a younger, physically fit adult involved in the same crash scenario. Therefore, efforts should be made to educate the elderly, as well as drivers, of their decrease in physical and cognitive abilities so extra precautions are taken that result in a change in behavior.

Another very important issue should be addressed when researching elderly pedestrians. A major shift is occurring in the population age distribution as a result of the baby-boom generation's maturation. These adults make up the fastest growing segment of the population, and it is predicted that approximately one in every four people will be aged 65 years and over in the foreseeable future. The proportion of people in this age group is expected to increase four-fold. This means there will be a large increase in the number of elderly pedestrians in the coming years. Therefore, safety concerns should also be presented to the age group from 55 to 64 in order to reshape their habits before these pedestrians reach an age in which they become more susceptible to accidents.

IV. BEST PRACTICES IN DEVELOPING A PEDESTRIAN SAFETY PROGRAM

The Federal Highway Association (FHA) created a set of guidelines entitled *A User Manual for Pedestrian Safety Programs* for a community-based program. The manual can be applied toward planning or educational purposes for pedestrian safety. In order to keep the review of the fifty-page booklet short, relevant sections will be summarized below.

Gathering Data –

- Collect information that includes safety and travel statistics, current program activity data, and citizen input on the community vision.
- Specific areas to research include:
  - Assessment of pedestrian crash problems
  - Survey of pedestrian facilities
  - How people are using pedestrian facilities
  - Policies, ordinances, standards, and codes

- Current education, enforcement, and encouragement programs
- Citizen input on safety
- New partners for the campaign

Implementing the Program –

- Keep the general public involved in shaping decisions such as public hearings and focus groups.
- A wide range of activities fall under the categories listed below during implementation:
  - Program kick-off media event
  - Implementing a public information program
  - Coordinating with local schools to implement a traffic safety program
  - Coordinating with law enforcement
  - Implementing a walking encouragement program
  - Coordinating with planners regarding updated policies, ordinances, and standards
  - Monitoring citizen actions

Evaluating & Revising -

- During the final stages of the pedestrian program, some of the following activities will take place:
  - Determine performance measures
  - Monitor pedestrian crash data and compare it with previous years
  - Conduct opinion polls
  - Obtain feedback from the public through community meetings
  - Document activities and accomplishments
  - Conduct surveys with pedestrians
  - Report the results of the surveys and programs to the media
  - Make adjustments to the implementation plans

In creating a pedestrian safety campaign for the elderly in Hawaii, widespread community involvement is encouraged to create awareness and educate both the pedestrians and drivers. It is imperative that the public is aware of the progress and the effectiveness of the newly implemented program. In addition, law enforcement efforts should happen concurrently with the awareness efforts. Therefore, police citations alone cannot make a broad difference in changing the behaviors of noncompliant pedestrians.

Moreover, a review of the Senior Pedestrian Injury Prevention Meeting held on April 8, 2003 in Honolulu revealed that law enforcement may not be the most effective way in reducing pedestrian fatalities. As noted by Major Brian Wauke of the Honolulu Police Department (HPD), most of the citations were concentrated in the downtown area and Waikiki, outside the neighborhood areas in Honolulu where most fatalities are occurring.

Major Wauke supported a combination of an education and public awareness campaign along with enforcement to increase pedestrian safety. In addition, the HPD's Traffic Division provides education through presentations, poster distribution, brochures, and at the time was in the production stages of a senior safety video.

Pedestrian Safety Brochures Available in Hawaii

In the past, various entities and campaigns in Hawaii have supported pedestrian safety issues through education and awareness in the form of brochures. Three pedestrian safety pamphlets have been collected and will be reviewed for their presentation of safety tips. Overall, each of the pamphlets illustrate similar basic pedestrian tips in a bulleted format that could be quickly read. A review of the three brochures is provided below:

Hawaii Department of Transportation: Safety Tips for Pedestrians

- The problem of pedestrian safety issues is presented on the front panel by stating the number of pedestrian deaths each year.

- Seven core safety tips are provided in English inside the front flap. Chinese, Filipino, Japanese, Korean, Samoan, and Vietnamese languages are included on additional panels of the pamphlet. The multiple languages are effective in acknowledging the diverse cultures of Hawaii.

- Guidelines for each safety tip are concisely presented, but reasons to adhere to each piece of advice are not included. For instance, one tip states, "Cross the street only at the corner or at a crosswalk. While crossing, keep to the right of the sidewalk." A suggested improvement would be to include reasoning to the tip by explaining how the right side of the crosswalk gives a driver more time to react when approaching an intersection. This addition may increase the influence of changing a pedestrian's behavior when they understand why they should follow the safety tip.

Honolulu Emergency Medical Services: Safe Crossing in Traffic for Seniors

- Senior pedestrian hazards are bulleted in one of the inside flaps and state that seniors are most likely to be injured at an intersection or crosswalk.

- Step-by-step directions to cross at busy intersections stress the importance of being careful and looking around. The steps seem a bit simplistic but are easily understood. Nothing new is presented in the directions that would reshape behavior that seniors already have at a crosswalk unless they are inattentive.

- The problem of seniors disregarding crosswalks is neither addressed nor discouraged. This information would be vital to a directed brochure considering the high number of fatalities involving elderly pedestrians were outside of the sidewalk. Therefore, the dangers imposed when improperly crossing the road should be included.

Drive Safely, Arrive Alive Campaign (DOT Sponsored): Pedestrian Safety

- Both pedestrians and drivers are addressed in the concern of pedestrian safety.

- Some points could add effectiveness with elaboration. For instance, one point states, "Don't jaywalk," but the law enforcement fine or the increased danger it imposes is not provided to discourage the action.

- The concern of developing a false sense of security is presented in the sentence, "Remember, crosswalks and traffic signals won't protect you," but it does not clearly explain why. A reason such as driver inattention or vehicle speed could be added in for better clarification. Also, the sentence is stated in a manner that crosswalks and traffic signals do not add any degree of safety, so it may need to be reworded to encourage their usage.

Positive elements from each of the brochures should be considered when creating a new educational pamphlet for senior pedestrian safety. The additional suggestions can be implemented in order clarify brief points that will further influence pedestrians. The three brochures can also be reviewed in the upcoming focus groups for Hawaii pedestrians to determine effectiveness and to get more suggestions for improvement. The key in designing the pamphlet is keeping the tips concise while including further explanations. Readers may get discouraged with wordiness, so the balance between being succinct and informative must be demonstrated. The focus group would be used to assess the readability of pedestrian safety brochures if changes are to be made.

During the launch of a pedestrian safety program in Hawaii, brochures can be used to spread awareness and educate the public on the proper behavior of walking along and across roadways. The brochures will reinforce messages presented in the publicity campaigns if they are distributed to the elderly while they are out walking. In addition,

strict police enforcement should take place during the initiation of the program, and brochures can be distributed to drivers and pedestrians along with a warning or citation.

V. QUALITATIVE STUDY ON PEDESTRIAN SAFETY

Over the course of a year, qualitative research sessions were conducted for the National Pedestrian Safety Engineering Outreach Campaign Technical to address social issues concerning pedestrian safety. The outreach campaign's main objectives were to sensitize drivers to pedestrians' rights, educate pedestrians on minimizing risk, and develop program materials to educate pedestrians and drivers about safety engineering countermeasures. Given the scope of this literature review, the first two objectives will be the primary focus in the session summaries below.

Technical Working Group: Session 1

Prior to the exploratory research conducted in focus groups, a Technical Working Group (TWG) comprised of engineering and safety experts from around the nation met during October 2001. The purpose of the collaboration was to address the main goals in developing a pedestrian safety program. The session was opened with summaries of statistics and studies related to pedestrian injuries and fatalities. This was followed by discussions on issues that needed to be addressed during the upcoming focus groups.

During the October session, the TWG members shared their concerns about the current state of pedestrian safety. Many expressed that engineering models are in the best interest of traffic efficiency rather than pedestrian safety. The conversation moved on to the topic of encouraging more people to walk. Another discussion revolved around public outreach programs to educate the community. Each of the topics will be further reviewed in more detail in the following paragraphs.

Breakout Sessions

After the group discussion, TWG members were divided into two breakout sessions. One group discussed pedestrians' attitudes and perceptions while the other group discussed drivers' attitudes and perceptions.

Key points recognized in each group are as follows:

Pedestrians –

- Pedestrians have safety misconceptions that include: "I'm safe if I'm on a trail," "It's safer to cross outside of the crosswalk," and "It's safer to walk with traffic."
- Pedestrians may be discouraged from walking: "It's not cool to walk," "It's too far to walk," "It's not safe to walk," and "I don't have time to walk."

- Pedestrians may feel that drivers are "out to get them."
- There is a lack of communication between the drivers and pedestrians, which leads pedestrians to run across the street in fear that vehicles will not stop.
- Some pedestrians feel that they do not need to communicate with drivers by assuming that "drivers can see me," "drivers are looking for me", and "drivers will yield to me."
- Other perceptions include: "Don't walk" means hurry, "When the button is pushed, the signal should change immediately," "Don't walk on a flashing stop," "Pedestrian laws don't count in parking lots," and "The wait takes forever to cross safely."
- Some people believe that there's no fines issued when jaywalking.
- Pedestrians don't understand the need to look for vehicles in driveways and alleys when they are walking on the sidewalk.
- They feel safer when walking in a group with the assumption that someone else is paying attention.
- Driver behavior, including speed, was determined to be a problem.
- Other problems include volume of traffic, design of intersections, and time allotted to cross at a signalized intersection.

Drivers -

- Many drivers believe all transportation revolves around them since driving is the primary mode of transportation.
- Motor vehicles give drivers the feelings of authority and power.
- The drivers' inability to see pedestrians was identified as a safety problem.
- Drivers feel that pedestrians are out of turn, unpredictable in their behavior, and in the way while crossing the street.
- Lack of understanding regarding pedestrian laws may be a problem among drivers.
- Another problem may be that pedestrian right-of-way laws are not reinforced after one completes driver's education.
- Drivers may disassociate with being a pedestrian while they are driving.
- They might not be aware of the severity of an accident with a pedestrian.

After the breakout session concluded, the TWG members reviewed findings on pedestrian and driver perceptions to identify questions for focus groups. A summarized version of the key questions is as follows:

Driver Focus Group Questions –

- What motivates drivers to respect pedestrians?
- Are drivers afraid of injuring pedestrians?
- What effect does law enforcement have on behavior?
- What level of enforcement effects behavior?
- Are drivers concerned with the aftermath of hitting a pedestrian?

- What stage of contemplation is the driver in?
- How are drivers addressed when concerning pedestrian safety?
- What was learned in driver's education in relation to pedestrians?

Pedestrian Focus Group Questions –

- When is the best time and channel to air a PSA?
- What is the reaction to shock messages vs. humor vs. showing proper safety behavior?
- How familiar are they with traffic laws?
- Do they obey pedestrian laws at all times?
- Do they know what a flashing "walk" sign means?
- What is the awareness and sensitivity of both pedestrian and driver travel behaviors?
- Is there a perceived pedestrian safety problem?
- How responsible would one feel for personal safety as a pedestrian?
- What would influence a change in walking behavior?

The TWG identified possible targeted audiences and developed the list of recommendations for a pedestrian safety outreach program:

Do

- Make bad behavior socially undesirable
- Deliver a message that relates to the audience
- Rotate delivery of message
- Use a message for local authorities to build upon
- Repeat exposure to campaign message
- Highlight desirable behavior so pedestrians and drivers will model it

Do Not

- Use technical language
- Use statistics
- Scare people into cars
- Use wordy print media
- Use analytical appeals over emotional messages

Focus Groups: Wave 1

After the TWG session, the first phase of focus groups commenced and was reported during January 2002. LISBOA, Inc. conducted four focus groups for the safety campaign in order to understand how pedestrians perceive themselves in relation to drivers, how drivers perceive pedestrians, how both groups understand pedestrian laws, and what types of public education would catch their attention. The results of four focus groups were comprised of the following: male and female pedestrians aged 21-65

years in Washington D.C., 18-25 year old male drivers in Washington D.C., male and female pedestrians aged 18-25 years in Los Angeles, and male and female drivers aged 18-25 years in Los Angeles.

Key Findings – Pedestrians

- Many respondents reported fear of being hit by a car and several reported close encounters with vehicles.
- Participants complained of poor sidewalk conditions, having no sidewalks, and not having time to cross the street after a signal changed.
- There were conflicting views on the understanding of pedestrians having the right of way.
- The use of wearing retro-reflective wear at night varied among the participants; all agreed it would be effective.
- No one reported a change in behavior after watching pedestrian safety PSAs.
- PSAs with shock value, original presentations, and messages including children were considered most effective.
- The statement, "Every seven minutes a pedestrian is killed or injured in a traffic accident" was the most effective of the statistics presented.
- Pedestrian safety themes that received the most positive responses are as follows:
  - Speed Less, Yield More
  - Stay Alert: You never know who you might run into
  - They won't bounce back from this one
  - Think of the impact you could make

Key Findings – Drivers

- Respondents said they were concerned about pedestrians not paying attention to traffic and pedestrian road signs, taking too long to cross the street, jaywalking, and children running into the street.
- There was also concern in not being able to see pedestrians.
- Some drivers said they almost had near-collisions with pedestrians in the past.
- There were conflicting views on the understanding of pedestrians having the right of way.
- Respondents agreed that all drivers should be reminded of pedestrian laws during license renewal.
- Many drivers indicated that they did not feel safe when walking.
- Some drivers said they would walk more if they felt safer, while others said additional safety would not influence them to walk more.
- Drivers said that law enforcement has a strong effect on their behavior by slowing down and driving carefully when police were around.
- There were mixed views toward feelings that all drivers respect pedestrians.

- Drivers do not want to hurt pedestrians, but they do not want them in their way, either.
- The most effective statistic was "Every seven minutes a pedestrian is killed or injured in a traffic accident."
- Pedestrian safety themes that the respondents tended to favor include:
  - Stay Alert: You never know who you might run into
  - Think of the impact you could make

Recommendations

LISBOA presented recommendations based on the findings of the first phase of focus groups. A summary of the recommendations is below:

- Campaign slogans with the broadest appeal were presented -
  - Directed at drivers
    - Stay Alert: You never know who you might run into
    - Think of the impact you could make
  - Directed at pedestrians
    - Be Safe, Be Smart, Be Seen
- The most effective statistic in addressing the pedestrian safety issue and conveying the idea that it could happen to them was, "Every seven minutes a pedestrian is killed or injured in a traffic accident."
- The Elaboration Likelihood Model describes the peripheral and central routes to information processing (Petty and Cacioppo 1986). This propensity model could be applied toward changing pedestrian safety behavior with a peripheral route.
- Engineering measures were recommended to reduce fears of walking in poorly maintained crosswalks.
  - Changes included more visible crosswalks, flashing lights at crosswalks, longer walk times, raised crosswalks, clearer crossing signs, better sidewalks, and barriers between pedestrians and cars.

Focus Groups: Wave 2

Another wave of focus groups were conducted by LISBOA, Inc. Two focus groups were formed to understand how pedestrians and drivers evaluate potential campaign concepts and themes. Both of the focus groups were held in Washington D.C. during February 2002. The first group consisted of male and female pedestrians aged 21-54 years, and the second group was composed with 18-25 year old male and female drivers. A summary of the second wave's findings is presented below.

Key Findings – Pedestrians

- Like the previous wave of focus groups, respondents expressed their concerns for pedestrian safety.

- Their concerns were based on drivers' inattention with responses such as, "Most drivers don't pay attention to the pedestrians and who has the right of way" and "I think drivers aren't paying attention these days."
- Pedestrians worried about being hit by a vehicle and believed that the vehicle really has the right of way.
- In response to their own actions, respondents stated that it was the pedestrian's responsibility to look out for himself or herself.
- The main safety concerns were cars, crossing the street, and not having enough time to cross an intersection during a "walk" signal.
- Respondents admitted to breaking pedestrian laws by jaywalking or walking during a "don't walk" signal.
- Even though they break pedestrian laws, they believed they were still acting responsibly while doing so.
- Several concepts and themes on pedestrian safety were presented with a commentator's play-by-play dialog demonstrating proper and improper safety during the nighttime as the most liked.
- Pedestrians also favored a driver concept that was presented with a driver and a victim's mother in two separate testimonials. Both explained their sides in the accident then came together to express their concerns by stating the campaign's slogan, "Please, stay alert. You never know who you might run into."

Key Findings – Drivers

- All of the participants expressed concern about hitting or injuring a pedestrian while driving.
- Respondents admitted that there were occasions when they were not paying attention to pedestrians.
- There was also concern with pedestrians in parking lots.
- When asked how they would pay more attention to pedestrians, the drivers suggested using emotional images such as someone facing consequences after hitting someone.
- The same concept of the driver and a victim's mother that was presented to the pedestrians was well received. It conveyed the message that the situation could happen to anyone.
- The play-by-play commentator concept directed toward pedestrians was also positive.

Technical Working Group: Session 2

Again the TWG group was composed of a different group of engineering and traffic safety experts from around the United States. Most the participants were already aware of the project upon arrival. A review of the first TWG's findings and recommendations were discussed at the start of the session. This was followed by a review of the key findings uncovered in the focus groups.

The following issues used to develop potential PSA messages for the campaign were presented to the group:

- Drivers yielding to pedestrians at turns
- Drivers yielding to pedestrians at marked crosswalks and intersections with no traffic signals
- Pedestrians understanding "walk" and "don't walk" signals
- Encouraging pedestrians to wear retro-reflective clothing

Next, three driver concepts and five pedestrian concepts were presented to the TWG. These were the same concepts presented to the focus groups during the second wave. Members critiqued and revised the concepts presented to them. Considering the amount of depth explained for each of the concepts, only the most favorable concepts for pedestrians and drivers will be reviewed in detail. Both concepts, Family Photos and Retro-reflective Play by Play, were also well received in the second wave of focus groups.

Family Photos

Rather than portraying one accident with the driver and victim's mother, respondents suggested that the PSA be overlapped with voices and feature different types of drivers. Another suggestion was to show a member of the target demographic saying, "This could happen to me" to increase the effectiveness of the message. A suggested alternate ending would be to show the driver in jail. Another suggestion was to have someone confront the driver, who would be feeling guilty about the accident. It was also noted that it should be clear that the driver in the PSA was not paying attention during the accident, but do not necessarily blame the driver. Overall, the TWG wanted to see a PSA that was not predictable.

Retro-reflective Play-by-play

The TWG members liked the idea of comparing the effectiveness of neon, white, and retro-reflective wear. Everyone agreed that messaging the use of retro-reflective would be effective, but expressed the difficulty it would be to have pedestrians to wear it properly. Therefore, the group made suggestions and the concept was revised to show firefighters using retro-reflecting material in the dark during a fire. Then the PSA continues with a firefighter heading out in casual clothing and expressing the importance of wearing retro-reflective clothing outside in the dark. Then the firefighter demonstrates the proper usage of the clothing.

The TWG suggested that the television PSAs are the keystone of the pedestrian safety project that would be used to shape the rest of the outreach campaign. The members also wanted it to be a nationalized campaign with the possibility of corporate sponsors.

Technical Working Group: Session 3

Again, the technical group was comprised of engineering and traffic safety experts. The overall objective presented to the TWG members was to "Reduce pedestrian injuries and fatalities via effective, research-based messages to drivers and pedestrians." The third session continued by reviewing the PSAs and proceeded with a discussion of the campaign roll-out planning.

In addition to the television and printed PSAs, there were discussions on whether or not brochures would be an effective use of resources. The concern was that participants would not read the brochures. On the other hand, there was interest in LISBOA to develop brochures as part of the campaign material. The brochure concepts were as follows:

- Drivers- the reasons for slowing down
- Explaining a multiple threat crash
- A series of brochures about crossing safely with the drivers and the pedestrian responsibilities listed out with each side specific to the two groups

The members also discussed how to launch the campaign. First, it would be test piloted in ten cities. This would be made possible with corporate sponsorship for help with marketing efforts. It was also planned to involve FHWA marketing people and Governor Safety offices to help with the roll-out.

The final steps regarding implementation were bulleted at the end of the report that covered the third TWG session. A selection of the key points is as follows:

- Three possible pitches are left turns, retro-reflective, and turn signals
- The time spans of the campaign will be to the local community's discretion
- The policy statement from the campaign would come from the DOT
- Media materials should be distributed, which include PSA's, pitch letter, and background materials
- Use the FHWA for influence to get into small publications, newspapers, or magazines
- Coordinate events with schools
- Keep a history of what worked and what did not
- Have the FHWA to set up a website for the campaign
- Ask the media to fax a form for the times, how often, and during which television shows the PSA was aired
- Stage press conferences to grab the media's attention
- Distribute the campaign materials through the FHWA

Although extensive planning and exploratory research was demonstrated through the outreach program's efforts, it has not been publicized on how well the campaign worked in improving pedestrian safety. This information is vital in creating an effective

campaign in Hawaii by knowing what has worked to influence a change in pedestrian and driver behavior. On the other hand, the attitudes and behaviors expressed in the focus groups prior to the design of the PSAs are useful in understanding pedestrians and drivers. This information can be compared to future focus groups conducted for Hawaii's pedestrian safety campaign.

VI. CONCLUSION

Various studies and reports have been reviewed that provide an understanding of why the elderly population is over-represented in Hawaii's fatality data on pedestrians. The research helped develop a base in understanding the physical abilities, behavior, and crash patterns of the elderly. In addition, focus groups and expert opinions have provided in the outreach program reviewed provides information on the general public in terms of attitudes and behaviors between pedestrians and drivers. During the latter half of the study, planning efforts were described for developing a national campaign and will be considered when implementing a local pedestrian safety program in Hawaii.

The campaign will be directed toward elderly pedestrians over the age of 65. Likewise, the pedestrians between the ages of 55 and 64 will be targeted considering the imminent increase in the size of the elderly age group once the baby boomers mature in the coming decades. In addition, drivers should be made aware of elderly pedestrian behavior so they will become more alert through the campaign's education efforts.

As stated through the NHTSA's *User Manual for Pedestrian Safety Programs*, program development will be a community effort with the support of public exposure and law enforcement. This will commence once an understanding of elderly pedestrians is further explored in Hawaii. Focus groups and questionnaires will uncover the reasoning behind senior pedestrians' actions and determine influences for a behavioral change.

Additional areas that need to be explored among the elderly pedestrians as well as drivers include:

- Reasons that encourage walking rather than driving
- Time of the day they walk most often
- Street crossing behavior
- Reasons for crossing the street outside of crosswalks
- Perceived risks when crossing properly versus improperly
- Perceived risks of being cited when pedestrian laws are broken
- Areas in which pedestrians are most at risk
- Driver attitudes toward elderly pedestrians
- Driver behavior in relation to pedestrian laws

Once this information is gathered and analyzed, planning for a pedestrian safety campaign for the elderly and drivers can be intiated.

APPENDIX A: COMPLETE ARTICLE ON ELDERLY PEDESTRIANS

Marked Crosswalks Aren't Enough to Protect Seniors

HealthDay Reporter
TUESDAY, Nov. 5 (HealthDayNews) -- Marking crosswalks to provide a safe path across the street endanger elderly pedestrians if the lines aren't accompanied by stop signs or signals to slow traffic, a new study shows.

Marked crosswalks in general double the risk that older pedestrians will be struck by an oncoming vehicle, the study found. However, that risk is the result of a near-quadrupling in collisions at intersections with pavement markings but nothing else to tell cars to halt, say the researchers, who report their findings in tomorrow's *Journal of the American*

Medical Association.
The crosswalks give older pedestrians "a false sense of security," says Dr. Thomas Koepsell, a University of Washington epidemiologist and lead author of the study.
Experts say efforts to make marked crosswalks safer, by installing stop signs and signals at dangerous intersections, could reduce accidents involving seniors. On wider roads, median strips can also prevent pedestrian injuries.

People aged 65 and older made up 21 percent of the nation's 4,739 pedestrian deaths in 2000.

The latest study looked at 282 pedestrian accidents involving people 65 and older in six Pacific Coast cities, including Seattle, Tacoma and Los Angeles between 1995 and 1999. Of those, most involved injuries and 20 were fatal. It also included information from 594 nearby intersections, such as foot and vehicle traffic, length of the crosswalk and the presence of signals.

The researchers used video cameras to monitor traffic flows, and found the perilous intersections had on average about 50 percent more pedestrians.

About two-thirds (68 percent) of the intersections where accidents had occurred had a marked crosswalk, compared with 49 percent of the safer zones, the researchers say.
After considering factors such as foot and vehicle traffic and the width of the street, an elderly pedestrian's risk of being struck was 3.6 times higher at marked but otherwise unprotected crossings.

Charlie Zegeer, associate director of the Highway Safety Research Center at the University of North Carolina, says his own research has shown similar results. However, Zegeer says, the risk of a marked crosswalk depends largely on the width of the street it spans and the volume of vehicle traffic the road holds.

Marked crossings on two-lane roads that support fewer than 10,000 cars a day aren't especially dangerous, says Zegeer, whose group analyzed 2,000 intersections in 30 cities nationwide. But those on wide streets with higher volumes have more pedestrian strikes, he says.
"On these wide streets, as volume gets higher, there needs to be more than two lines of paint across the street to make for a safe crossing," Zegeer says. Installing median strips that allow walkers to watch only one direction of traffic at a time can make a dent in the accident rate at these areas, he adds.

Some communities have experimented with a cheap form of pedestrian safety called self-flagging crosswalks, which have a box or quiver containing brightly colored flags on either side. A pedestrian holds the flag while crossing so as to be better seen, and places the flag in the box on the other side.

Officials know some flags get stolen, but they're easily replaced and theft is less likely an issue in neighborhoods where a lot of seniors live.

Pedestrian deaths have been dropping steadily over the last three decades, down 51 percent between 1975 and 2000, says Russ Rader, a spokesman for the Insurance Institute for Highway Safety. The decline has been even greater among the elderly, for whom pedestrian fatalities are down 60 percent during the same period.
In addition to roadway design changes, other strategies can safeguard walkers, Rader says. One of these is making daylight savings time a year-round policy. Adding an extra hour of afternoon light could prevent 180 deadly wrecks, 80 percent of them involving pedestrians, Rader says.

What To Do

For more on the safety of older pedestrians, try the National Highway Traffic Safety Administration or the Pedestrian and Bicycle Information Center. You can also visit the Insurance Institute for Highway Safety.
(SOURCES: Thomas Koepsell, M.D., M.P.H., professor of epidemiology, University of Washington, Seattle; Charlie Zegeer, associate director, Highway Safety Research Center, University of North Carolina, Chapel Hill; Russ Rader, spokesman, Insurance Institute for Highway Safety, Arlington, Va.; Nov. 6, 2002 *Journal of the American Medical Association*)

APPENDIX B: COMPLETE ARTICLE ON ELDERLY PEDESTRIAN ACCIDENT

Newswatch

By Star-Bulletin Staff
Tuesday, January 2, 2001

Traffic accidents leave two dead, one critically hurt

Two early-morning traffic accidents today on the Windward side left two people dead and one critically injured.

A head-on collision in front of Olomana Golf Course in Waimanalo at 5:25 a.m. killed one woman and seriously injured a man.

Police said the 19-year-old male, from Waimanalo, was driving a 1988 Chrysler on Kalanianaole Highway toward Waimanalo when he crossed the center line. His car struck a silver 1988 Honda Civic driven by a 32-year-old woman, also from Waimanalo, who died at the scene.

The man was taken to Castle Medical Center, where he was listed in critical condition. Neither victim was wearing a seat belt at the time of the collision, police said.

Police also said alcohol is believed to be a factor.

At 5:58 a.m., an elderly pedestrian died when he was struck by a van near Star Market, at 46-023 Kamehameha Highway.

Police said the man, in his 80s, ran across the street outside of a crosswalk on the road and was hit by a Chevy van. He reportedly was walking 3 to 5 feet out of the crosswalk when hit, police said.

Dennis Espina, bakery manager at Star, said he heard a screech from behind the store. He called 911 and administered CPR on the victim before police arrived.

The victim was taken to Castle Medical Center, then transferred to Queen's Medical Center, where he died.

APPENDIX C: COMPLETE ARTICLE ON PEDESTRIAN SAFETY MEASURES

Task force goal: Safe crossing

The number of pedestrian deaths and injuries on Oahu sparks a search for new safety measures

By Rod Ohira
Star-Bulletin

Monday, December 13, 1999

One thousand, six hundred twenty-five pedestrians were injured or killed on Oahu from 1996-98, spurring the formation of a joint task force dedicated to making crossing roadways safer.

"The total number of pedestrian crashes has gone down statewide but we're noticing an increase in severity," said Alvin Takeshita, a state Department of Transportation traffic safety engineer and member of the 4-month-old Pedestrian Fact-Finding Task Force.

"What we're seeing is more fatals."

Pedestrians have accounted for 14 of Oahu's 44 traffic fatalities this year.

Pedestrians beware

Pedestrian accidents on Oahu by Police District:

	1996	1997	1998
Honolulu	145	128	135
Kalihi	101	97	103
Waianae	42	55	51

Note: The Kalihi district includes the Likelike and Pali Highways. Waianae includes accidents on Farrington Highway.

Star-Bulletin

The task force has examined alternative solutions, but most are either not practical for Hawaii or too expensive.

A different approach to the three E's -- education, enforcement and engineering -- will be part of a pilot project the task force is planning for the Kalihi and Waianae police districts.

"The bottom line is we know there's a problem and we're working together to do something about it," said Sgt. Robert Lung of HPD's Traffic Division, the task force chairman.

The success of any plan begins with changing the attitudes of both pedestrians and motorists.

Many pedestrians, for example, view a crosswalk as a protective barrier, but it's not.

"That's why we say they can be right -- dead right," Takeshita said. "Pedestrians need to know they are not totally safe in a crosswalk, that they have to be aware of drivers."

Pedestrians crossing multi-lane roadways, such as South King Street in Moiliili, may get motorists to stop in three of four lanes but someone on foot may not be visible to a driver in the fourth lane, Lung said.

"The perception of the pedestrian is that all lanes are clear," he said.

For motorists, Lung said, the common perception is "it's our road , so their focus is on the road, not the side of the road."

That attitude becomes deadly when speed on the wide straightaways is factored in.

"Roads like Pali, Farrington and Kalanianaole highways look like freeways, so people perceive them as freeways," Lung said. "They're traveling at a high rate of speed, not expecting a pedestrian to be crossing in front of them.

"We've been taught that peripheral vision closes the faster you go, and sight distance becomes shorter. The driver becomes focused on what's in front, not on the side."

There are subtle downhill stretches along Pali Highway's downtown-bound lanes, especially in the Nuuanu area of Jack Lane, where two pedestrian crashes have occurred this year.

Lung believes many drivers take their foot off the gas pedal in those areas, mistakingly thinking it will slow the vehicle down.

"They don't realize that by letting the momentum of the vehicle carry them downhill, they'll gain speed," Lung said. "That's why coasting is illegal. They should be braking instead."

Some working examples

The task force, which also includes city Transportation Services and Federal Highway Administration representatives, has been studying programs that are working elsewhere, such as:

- Pedestrians in Japan carry flags while crossing. The flags are placed in buckets attached to poles at crossing sites.

- In Canada, motorists and pedestrians by law must physically acknowledge each other during crossings.

- Seattle uses overhead electronic boards in heavy access areas to alert motorists that someone is crossing, Lung said.

"There's also something called a Crossing Guard that lights up a crosswalk when a pedestrian presses a button," Lung added. "The latest technology is a pole with a light bulb on top that lights up when someone is crossing.

The task force believes the programs in Japan and Canada would not work here because of thieves and the "stink eye" perception, respectively.

The other programs may not be affordable here, Lung said.

After breaking down the 1996-98 numbers, the task force plans to implement pilot programs in the Kalihi and Waianae police districts to see what might work.

The Kalihi district, which includes Honolulu-side coverage of Pali Highway up to the tunnel, had 101 pedestrian crashes in 1996, 97 in 1997 and 103 in 1998.

Kalihi's 301 incidents is second only to Central Honolulu's three-year total of 408, but the district was selected because it has some particularly troublesome crossings.

"There have been eight pedestrian crashes at two intersections over the last three years, five at Liliha and Kuakini streets and three at Liliha Street and Holokahana Lane," Lung said.

The problem at Liliha and Kuakini streets is twofold.

It involves motorists turning right from Liliha onto Kuakini on a red light and those attempting a left turn from the Liliha Bakery side of Kuakini Street to Liliha Street.

"Attention is focused on traffic, not the crosswalks," Lung said. "On the right turn, they're looking (left) at traffic for an opening and for the left turn, they're focused on oncoming traffic, not someone who may be in the left crosswalk.

"The right turn problem can be solved by not allowing right turns on red. But the left turn is really a tough problem. The road is too narrow to put in a storage lane for left turns on an arrow."

Turning from Holokahana Lane to Liliha also presents a problem for motorists, who are focused on looking for a traffic opening, Lung added.

Problem severe in Waianae

Waianae was selected because of the severity of its 148 pedestrians crashes the last three years.

Eighty-five children 18 years and younger were injured or killed during that period; 49 of them occurred at intersections.

The target area for Waianae's two pilot projects are Lualualei Homestead Road to Hakimo Road, where 13 pedestrians crashes have occurred, and also Pokai Bay Street to Kauiokalani Place, where there have been 17 incidents.

Median strip for Farrington?

"Many in Waianae perceive Farrington Highway as one big crosswalk so they try to cross anywhere, especially to get to a particular spot on the beach," Lung said. "Speed is probably involved but the road is also very wide, so you've got to sprint across."

Task force members sought an opinion from Charles Zeeger of the North Carolina Highway Safety Research Center while he was in Honolulu for a recent traffic forum about its project areas.

Zeeger recommended putting in a median strip, like the one on Kalanianaole Highway, on Farrington Highway.

Zeeger noted it would not only prevent vehicles from veering left of center but could provide a safe haven for pedestrians.

"We're looking at millions of dollars, so it's cost prohibitive," Lung said. "We're stuck on what we want there but whatever is decided, we'll take it to the residents first.

"The last thing we want is another traffic light on Farrington Highway, because it's not a solution. People will continue to cross against the light and drive through them."

Overpasses, which are under used, are not considered an option.

"We've found that it's impossible to meet (American Disabilities Act) standards for overhead or sub-roading (passes)," Takeshita said.

"Awareness is part of the solution, but it involves changing mind-sets. It has to be friendly to both pedestrians and drivers."

APPENDIX D: COMPLETE ARTICLE ON PEDESTRIAN RISKS

STAYING SAFE IN THE STREETS

Pedestrians at risk on busy roads

The police department looks for ways to make motorists and people on foot more aware

By Rod Ohira
Star-Bulletin

Tuesday, April 27, 1999

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Laura Lee knows that using a crosswalk isn't enough to guarantee safe passage across today's wider, more congested roadways.

"Crosswalks don't mean anything to some drivers," says Lee, a 78-year-old Liliha resident. "Even if a car stops when you're crossing, you still have to watch for the car in the next lane.

"You just can't take anything for granted."

Statistics show that it's true: A crosswalk is no guarantee of safety.

In 1997, 226 of 646 pedestrian injuries in Hawaii occurred in crosswalks, according to Department of Transportation Traffic Branch statistics.

From 1987 to 1997, 307 pedestrians were killed on Hawaii's roadways, including 73 people who were crossing in a crosswalk.

Thirty-five others were killed while crossing outside a crosswalk, and 55 were crossing where there was no crosswalk.

On Oahu, pedestrians have accounted for six of 16 traffic fatalities this year and 28 percent of 386 roadway deaths since 1994, when Honolulu began tracking pedestrian fatals.

"All it takes is for one person to step out without looking and you have a potentially fatal collision," Capt. Scott Foster of the East Honolulu patrol district said.

"It can happen anywhere. If you're looking for a cause, most likely it's inattentiveness. It could be on the part of the driver, pedestrian or both parties."

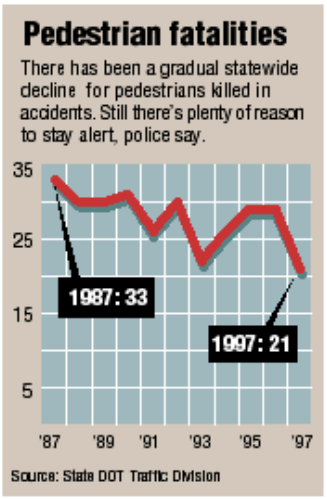
Age appears to be a factor, as pedestrian fatalities fall basically into two age groups, older citizens or very young children, say police.

Sixty-three percent of 109 pedestrians killed on Oahu over the past 64 months were 50 years or older, including 49 who were over the age of 70.

Ten of the fatalities during the same period were children under the age of 10, including a 2-year-old Kailua girl this year.

By Kathryn Bender, Star-Bulletin
Ten of the 109 pedestrians killed in Oahu traffic fatalities in the past 64 months were children under the age of 10.

Of the 307 pedestrian fatalities in Hawaii from 1987 through 1997, 122 were people 65 years and older, according state statistics. Thirty-six others were 14 years old or younger.



"Most pedestrian fatalities involve the older generation only because many have the mentality that they can cross wherever and whenever they want," says Sgt. Robert Lung, the Honolulu Police Department's liaison to the state Transportation Department's Safe Community Program for traffic safety.

"The streets now are wider and they (older people) can't walk fast enough to cross. Most fatalities also occur in dark hours, so it helps not to wear dark clothing."

Police Traffic Division Maj. Rafael Fajardo says pedestrians have the right of way but should remain alert to avoid being "dead right."

"We need to change the mind-set of motorists and pedestrians to make them more aware of each other," Fajardo says.

"In Ontario, Canada, pedestrians hold an arm out while crossing and proceed only after making eye contact with the motorists. We're looking at implementing something similar here."

Sgt. Karen Huston, a vehicular homicide investigator, says motorists involved in pedestrian fatals often say they did not see the victim or couldn't stop in time.

"We interpret that as speed or inattentiveness while driving being factors," Huston said. "For pedestrians, they need to check every single lane before proceeding."

Fumiko Okamoto, 79, of Kuliouou says "walk lights" often start blinking, indicating "don't walk" while she's crossing the street.

There's still enough time to finish the crossing but Okamoto says the signal change, warning others not to start crossing, makes her nervous.

"You always have to be alert because you never know if the car that's coming is going to stop," Okamoto says. "I see some people just crossing with the light, not paying attention."

Hajime Torikawa, 86, of Kakaako doesn't venture too far from his home but would rather catch a bus than walk two blocks to a market on Queen Street.

"There's no sidewalks," Torikawa says, pointing to a stretch of Queen Street leading to Hamada Store. "Too many parked cars there, it's dangerous to walk."

Rehabilitation Hospital of the Pacific medical director Dr. Sungyul "David" Kim says pedestrian or bicycle accidents cause 20 percent of all brain injuries in the United States.

"Some patients may not have any visible physical injuries but there may be a problem later with comprehension," Kim said. "It's a common problem that health-care providers tend to overlook."

APPENDIX E: COMPLETE ARTICLE ON CROSSWALK DANGERS

Traffic solutions are sought for the perilous Pali

The neighborhood board hears suggestions in the wake of Sunday's death of an elderly pedestrian

By Mary Adamski
Star-Bulletin

Wednesday, June 16, 1999

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Residents suggested more traffic lights, fewer crosswalks, flashing warning signs and pedestrian overpasses as antidotes to the deadly mix of fast traffic and pedestrians on busy Pali Highway.

"I cannot hop, skip and jump across that highway," said Miriam Tollefsen of Papakolea, who suggested building pedestrian overpasses. "Senior citizens are slow like turtles."

"It's a six-lane highway through a residential neighborhood. They don't mix," said Nuuanu/Punchbowl Neighborhood Board member Paula Kurashige.

The discussion at last night's board meeting was generated by the death Sunday of a pedestrian who was struck while crossing near Niolopa Place in one of three Pali crosswalks that do not have pedestrian-activated traffic signals. Kurashige called for a brief moment of silence in memory of the victim, Anna Hara, 90.

"If it's a highway, then cut out the walkways. Just make (crossings) at the lights," said Bruce Coppa of Nuuanu. He pointed out that there are seven crosswalks through that stretch of homes and churches.

Board member Joe Magaldi, deputy director of the city Department of Transportation Services, said the city has removed some midblock crosswalks from city streets because "they give pedestrians a false sense of security."

"We do enforce the speed limit as much as we can," said police officer Joseph Kim, describing radar monitoring and citation efforts.

"But we can't be there every minute, and when we're not there, people will speed," Kim said.

Board Chairwoman Audrey Hidano said she crossed at a Pali Highway crosswalk yesterday, and "I literally had to run. People saw me but they didn't slow down."

Board member Patt Spencer said she had suggested installing flashing yellow lights over the crosswalks but was told by the state that it couldn't be done.

'It's a six-lane highway through a residential neighborhood. They don't mix'

Paula Kurashige
NUUANU/PUNCHBOWL
NEIGHBORHOOD BOARD MEMBER

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Area legislators told the board that the state Department of Transportation will begin design work in September for a traffic light at Jack Lane/Akamu Place, to be completed by May 2001. State Rep. Sylvia Luke (D, Nuuanu-Punchbowl) said the crosswalk will be laid out in diagonal paths, almost a V configuration, so that pedestrians will be facing into oncoming traffic on each side of the grassy median.

"The Department of Transportation tells us that more lights can create more accidents, more rear-end collisions," Luke told the board.

Coppa said officials don't have to wait until completion of the planned light to address the problem. He suggested setting up electronic signs that display radar readings of motorists' speed as they pass.

Kurashige recalled past campaigns, including a petition drive to add traffic lights. Last year, residents turned out to hold signs along Pali Highway urging drivers to slow down. She pointed out that a woman pedestrian was killed crossing at Waokanaka Street two years ago.

"I hope and pray it doesn't happen again while we wait for something to be done," she said.

APPENDIX F: COMPLETE ARTICLE ON SUGGESTED PREVENTIONS

Community, officials to discuss preventing pedestrian deaths

By Gordon Y.K. Pang
Star-Bulletin

Tuesday, November 28, 2000

Kalihi-Palama leaders and city transportation officials will meet next Tuesday to discuss ways to prevent another pedestrian fatality near the North King Street and Peterson Lane intersection.

Taisi Fatanu, 68, was struck by a van and killed after attempting to cross King Street near the intersection Friday morning. He was not in a marked crosswalk.

Neighbors, including those with the Kalihi-Palama Health Center, say there have been a number of pedestrian accidents in the area over the years and they have tried without success to get a traffic light installed.

May Akamine, executive director of the health center, said transportation officials have told her in the past that studies indicate a traffic light is not warranted based on the foot traffic, two nearby traffic lights and the lack of any previous fatal accidents.

Akamine said numerous people cross King Street each day and many aren't willing to walk to the traffic signals at Palama Street or Kokea Street.

The area is densely populated with businesses and residents, not to mention the nearby Kaiulani Elementary School and Kaumakapili Church. Bus stops are on both sides of the street near where the man was killed, she said.

Akamine said her clinic may have added to the foot traffic when it expanded across the street from its original facility on the makai side. The clinic serves nearly 14,000 patients.

Cheryl Soon, transportation services director, visited the accident scene Sunday and agreed to meet with Akamine and the community next week.

"We have a number of suggestions we will be sharing with the community," Soon said. As for whether she now supports a traffic light in the middle of the block, she said "I'm open to the dialogue."

Charlotte White, principal of nearby Kaiulani Elementary, said she "cringes" each morning for the safety of her 470 students. "The traffic is very heavy on King Street," she said.

While Akamine and White both would like to see the city put up a traffic signal, they think other things can be done to improve the hazardous conditions.

Akamine suggested better striping of streets and better placement of flashing lights warning motorists to slow down.

Both women also advocated more education for pedestrians and motorists passing through.

In 1998, the city installed a traffic signal on South King Street fronting McKinley High School -- between signals at Pensacola and Victoria streets -- following a pedestrian accident that injured two students. The distance between Pensacola and Victoria streets is shorter than that between Kokea and Palama streets.

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